



# City of Santa Barbara

## Community Development Department

[www.ci.santa-barbara.ca.us](http://www.ci.santa-barbara.ca.us)

### MEMORANDUM

**DATE:** May 6, 2002  
**TO:** Interested Parties  
**FROM:** Bettie Weiss, City Planner

**SUBJECT:** CALCULATION OF AVERAGE SLOPE OF PARCELS TO DETERMINE IF DEVELOPMENT APPLICATIONS CAN BE EXEMPTED FROM ABR

The following policy is to be implemented immediately due to concerns regarding the accuracy of the City's slope information for Staff to properly verify that development for parcels in hillside areas require Architectural Board of Review (ABR) or may be correctly exempted from ABR review (under 20%). All applications involving parcels which are 18% or over (according to City slope info) shall require maximum slope information on the plans, and require the preparation of a topographic survey map depicting slope contours and the submittal of average slope calculations consistent with the Zoning Ordinance to verify if the project is exempt from ABR as stated below:

**SBMC SECTION 22.68.045.B: EXCEPTIONS TO REVIEW BY THE ARCHITECTURAL BOARD OF REVIEW IN THE HILLSIDE DESIGN DISTRICT.** One-family and one-story two-family structures in the Hillside Design District will not be subject to review and approval by the Architectural Board of Review if: 1. The average slope of the building site and the entire property is less than twenty percent (20%); ...

The following SBMC §28.15.080 formula and steps are to be utilized by a licensed engineer, surveyor, or architect in order to calculate average slope of the building site or entire parcel for all types of ABR applications located in the Hillside Design District that require review by the full board and other reviews such as zoning modifications and Planning Commission applications\*:

"Average slope" of a parcel of land or any portion thereof shall be computed by applying the formula ( $S = .00229 \text{ IL} \div A$ ) to the natural slope of the land, before grading is commenced as determined from a topographic map conforming to National Mapping Standards and having a scale of not less than 1 inch equals 200 feet and a contour interval of not less than five feet (5'). The letters in this formula shall have the following significance:

- S = The average slope of the land in percent.
- I = The contour interval in feet.
- L = The combined length of all contours in feet, excluding the length of contours in drainage channels and in natural water courses below the 25-year flood level.
- A = The net area of parcel or portion thereof, in acres, after deducting all areas in drainage channels below the 25-year flood level, for which the slope is to be determined.

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$$\text{AVERAGE SLOPE: } \frac{0.00229 \times I \times L}{A} = S \quad (1 \text{ Acre} = 43,560 \text{ sq. ft.})$$

**Example:** A 25,000 sq. ft. lot with no drainage area.

*Calculate "A" by dividing the net size of the lot by an acre in square feet. See below:*

$$\frac{\text{Net lot area (in sq. ft.)}}{43,560 \text{ sq. ft.}} = \text{Net lot area (in acres)}$$

$$\frac{25,000 \text{ sq. ft.}}{43,560 \text{ sq. ft.}} = 0.573 \text{ acre}$$

The slope verification steps listed below must be followed in order to verify the accuracy of slope calculations submitted:

**Steps:**

1. Note scale- Contour interval (5 foot minimum).
2. Reset Digital Plan Measuring Tool instrument at 0.
3. Begin to measure contour lengths from one end of property to the other (across property).
4. Read instrument being careful not to over run lengths of contours. (Recheck by averaging 3 readings).
5. Plug net area of parcel, contour interval, contour length data into formula to calculate average slope of parcel.

Once the average slope of the parcel has been calculated and verified. The project parcel's newly calculated average slope determination shall be reviewed for accuracy, dated, referenced and entered into Tidemark Advantage. The final determination to exempt projects from ABR review based on slope calculations shall be made by a Planning Division Supervisor.

**\*Please note that the submittal must include a site plan with the following: a) scale to National Mapping Standards and not less than 1 inch = 200 feet; b) contour intervals of not less than 5 feet; c) length of each contour; d) slope calculation; and e) seal and signature of the licensed professional. We may also require this slope calculation in other instances, such as to determine slope density or reductions in front yard setbacks, etc.**